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ABSTRACT

A detailed description is provided of the variable interorganizational relations (IOR), which is part of the analysis in phase I of the Evaluation of Practices in Individualized Schooling. The variable is defined; the questionnaires on which the variable is based are listed; the procedures used to scale the variable are explained; the distribution of the variable in the 156 individually guided education (IGE) schools which participated in phase I is described; and the internal consistency of the variable is reported. (Author/MH)

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Technical Report No. 476

PROCEDURES USED IN PHASE I OF THE IGE EVALUATION TO SCALE THE VARIABLE INTERORGANIZATIONAL RELATIONS

by Gary G. Price, Terence C. Janicki, Judith A. Howard, Deborah M. Stewart, Anne E. Buchanan, and Thomas A. Romberg

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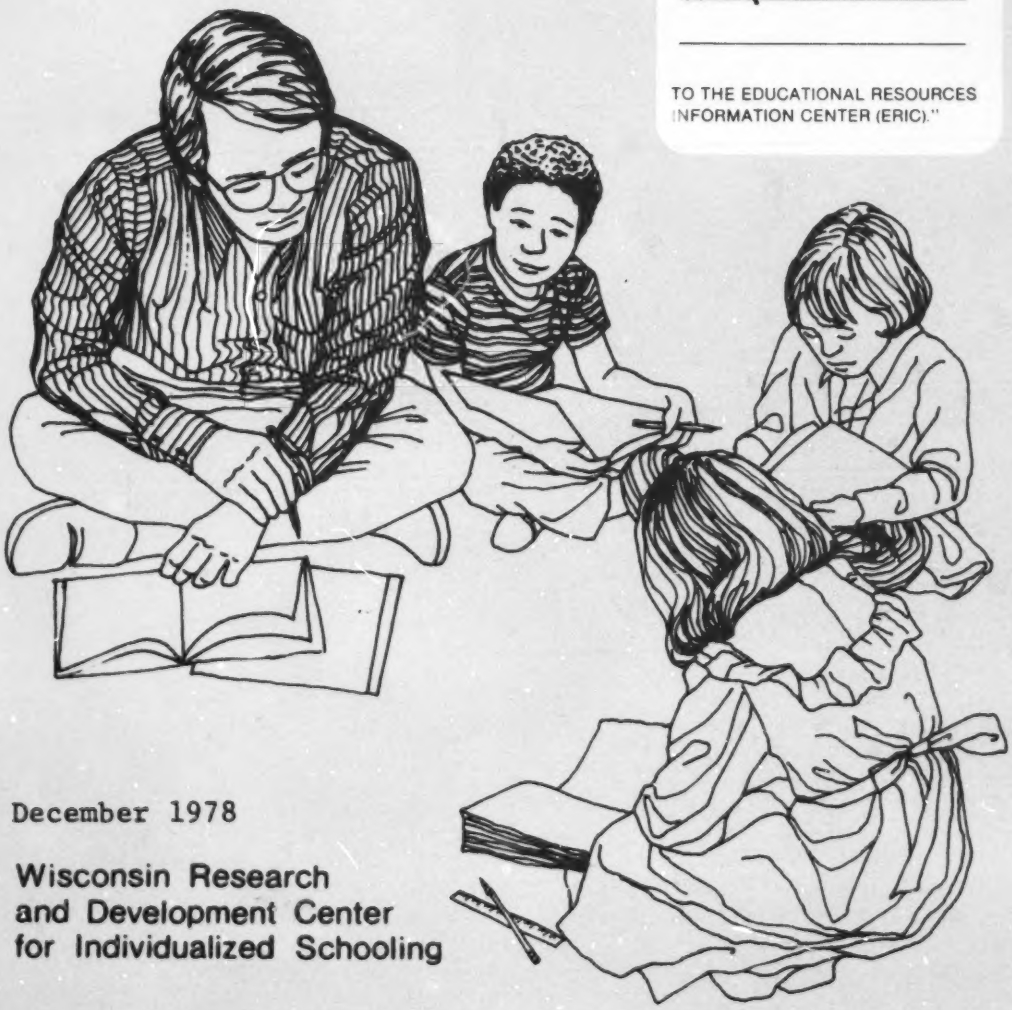

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Report from the Project on
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Gary G. Price and Thomas A. Romberg
Faculty Associates

Wisconsin Research and Development Center
for Individualized Schooling
The University of Wisconsin
Madison, Wisconsin

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- providing assistance to educators which helps transfer the outcomes of research and development to improved practice in local schools and teacher education institutions

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Abstract

This report provides a specific discussion of a variable that is part of the analysis in Phase I of the Evaluation of Practices in Individualized Schooling. The name of the variable is Interorganizational Relations (IOR). Included in this discussion is a verbal definition of the variable, a list of the questionnaire items on which the variable is based, a technical explanation of the procedures used to scale the variable, a description of the distribution of the variable in the 156 schools that participated in the Phase I study, and the internal consistency of the variable. Most readers would find it useful to read Technical Report No. 475, Overview of School and Unit Variables and their Structural Relations in Phase I of the IGE Evaluation, before beginning this one.

This Technical Report provides a detailed description of the variable, Interorganizational Relations (IOR). The description includes a verbal definition of the variable, a list of the questionnaire items on which the variable was based, and a technical explanation of the procedures used to scale the variable. The report also contains a description of the distribution and the internal consistency of the variable. This variable, among others, is part of the analysis in Phase I of the Evaluation of Practices in Individualized Schooling. Phase I, which is a study of 156 Individually Guided Education (IGE) schools, is the large sample part of the overall evaluation effort. Further explanation of the Phase I study and an explanation of the relationship of this variable to the Phase I analysis is given in Technical Report No. 475, Overview of School and Unit Variables and their Structural Relations in Phase I of the IGE Evaluation.

Verbal Definition of the Variable

Interorganizational Relations (IOR) is a measure of the school's interrelationships and activities with persons and organizations outside the school, especially those that are believed to facilitate implementing and maintaining IGE in the school. This includes extraorganizational arrangements and activities (of the school and of staff members) which are likely to keep the school informed of community needs and new educational ideas.

Explanation of Variable-naming Conventions

This measure, like most of the variables used in Phase I of the IGE evaluation, is a composite of items taken from several different instruments. The names and identification numbers of the respective instruments are given in Table 1, along with other information. The instruments numbered 11, 17, 51, 52, and 53 were given to all staff members[1] of each school studied, and were to be filled out individually. One copy of Instruments 22, 25, and 26 was given to each of the I&R units[2] studied (two I&R units from each school, one that included second grade students and one that included fifth grade students). These instruments were filled out by the unit as a group, after they reached consensus. Instru-ments 23 and 24 were given to teachers of the I&R units studied and they filled them out individually. One copy of Instruments 16 and 21 was given to the IIC of each school, and was filled out by the IIC as a group. Instrument 13, a questionnaire about the entire school, was filled out by the principal of the school.

In order to keep track of information collected from different sources, it was necessary to develop some complex conventions for naming variables. Those conventions are explained here. The abbreviated name of each item and each variable contains eight or fewer

---

[1] Includes all professional personnel (i.e., not aides) assigned at least one-third time to the building in both the 1976-7 and 1977-8 school years.

[2] Includes all professional personnel (i.e., not aides) assigned at least one-third time to the I&R unit in both the 1976-7 and 1977-8 school years and directly involved in planning instruction for the unit students in reading, math, or language arts.

characters, in order to be readable by computer. The first character of each item and variable name is a letter that indicates the case for whom the item or variable is a measure. In this discussion, variables include information from two or more questionnaire items or transformed information from one item. Items coming from a common source (i.e., the same respondents) were collected into a common data file whose name corresponds to the first letter in the names of all items collected in it. There were six such files. Those files, described in terms of the cases to which they pertain and in terms of their respective alphabetic codes, are:

A I&R units containing 2nd grade students (the I&R unit as a case).

B I&R units containing 5th grade students (the I&R unit as a case).

C The entire school as a case.

F Individual teachers of I&R units containing 2nd grade students.

G Individual teachers of I&R units containing 5th grade students.

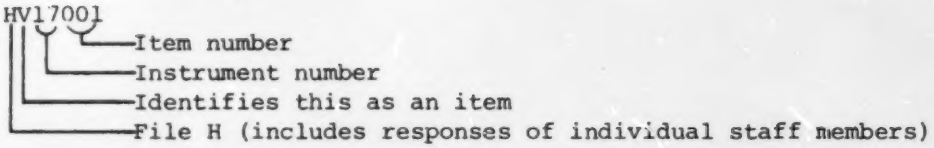
H Individual staff members employed by the school.

Item names. The second character in all item names is the letter "V," which distinguishes item names from names of other variables. The third and fourth characters in item names denote the number of the instrument of which the item is a part (see Table 1). The fifth, sixth, and seventh, and in some cases, eighth characters in item names contain the identification number of the item within the instrument. For example, Item number 1 from the Staff Background Questionnaire (Instrument 17), which was given to all members of the school staff, is named as follows:

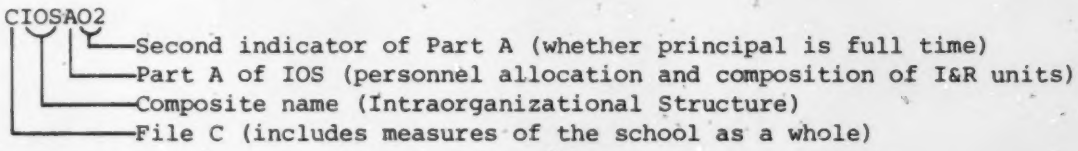
Table 1

Instrument Identification

Test booklet	Instrument	Instrument number	File	Respondent
General staff questionnaire	IGE implementation survey	11	H	School staff members
	Staff background	17	H	School staff members
	Assumptions regarding conditions of schooling	51	H	School staff members
	Job satisfaction survey	52	H	School staff members
	Assumptions regarding learning and knowledge	53	H	School staff members
Unit staff questionnaire	I&R structure and functi	22	A,B	Unit as a group
	Record keeping and regrouping	25	A,B	Unit as a group
	Instructional time and objectives	26	A,B	Unit as a group
	Role of staff teacher	23	F,G	All unit teachers
	Instructional practices	24	F,G	All unit teachers
IIC questionnaire	IIC structure and function	21	C	IIC as a group
	Demographic background	16	C	IIC as a group
IGE schools questionnaire	IGE schools questionnaire	13	C	Principal



Variable names. Variable names, like item names, begin with an alphabetic code that indicates the cases to which they pertain. Following that first character is an abbreviation of two to four characters used by the evaluation staff to denote the major composite of which the variable is a constituent. Subsequent characters identify the position of the variable in the scaling operation, as diagrammed in Figure 1. For example, one of the constituents of the Intraorganizational Structure composite (IOS) is named as follows:


CIOSAO2
Second indicator of Part A (whether principal is full time)
Part A of IOS (personnel allocation and composition of I&R units)
Composite name (Intraorganizational Structure)
File C (includes measures of the school as a whole)

Some of the composites are measures of the school as a whole, whereas others are specific to both the I&R unit (2nd or 5th grade) and the subject area (math or reading). Composites that pertain to the school as a whole are: Interorganizational Relations (IOR), Procedures Fostering Coordination and Improvement of the School Program (GOSB), General Staff Background (GSB), Intraorganizational Structure (IOS), Belief in Individual Differences (INDIV), View of Learning: Constructivism vs. Behaviorism (CVSB), the School's Demographic Setting (DB), General Implementation of the Instructional Programming Model (GOSA), and Teacher Job Satisfaction (JOBSAT).

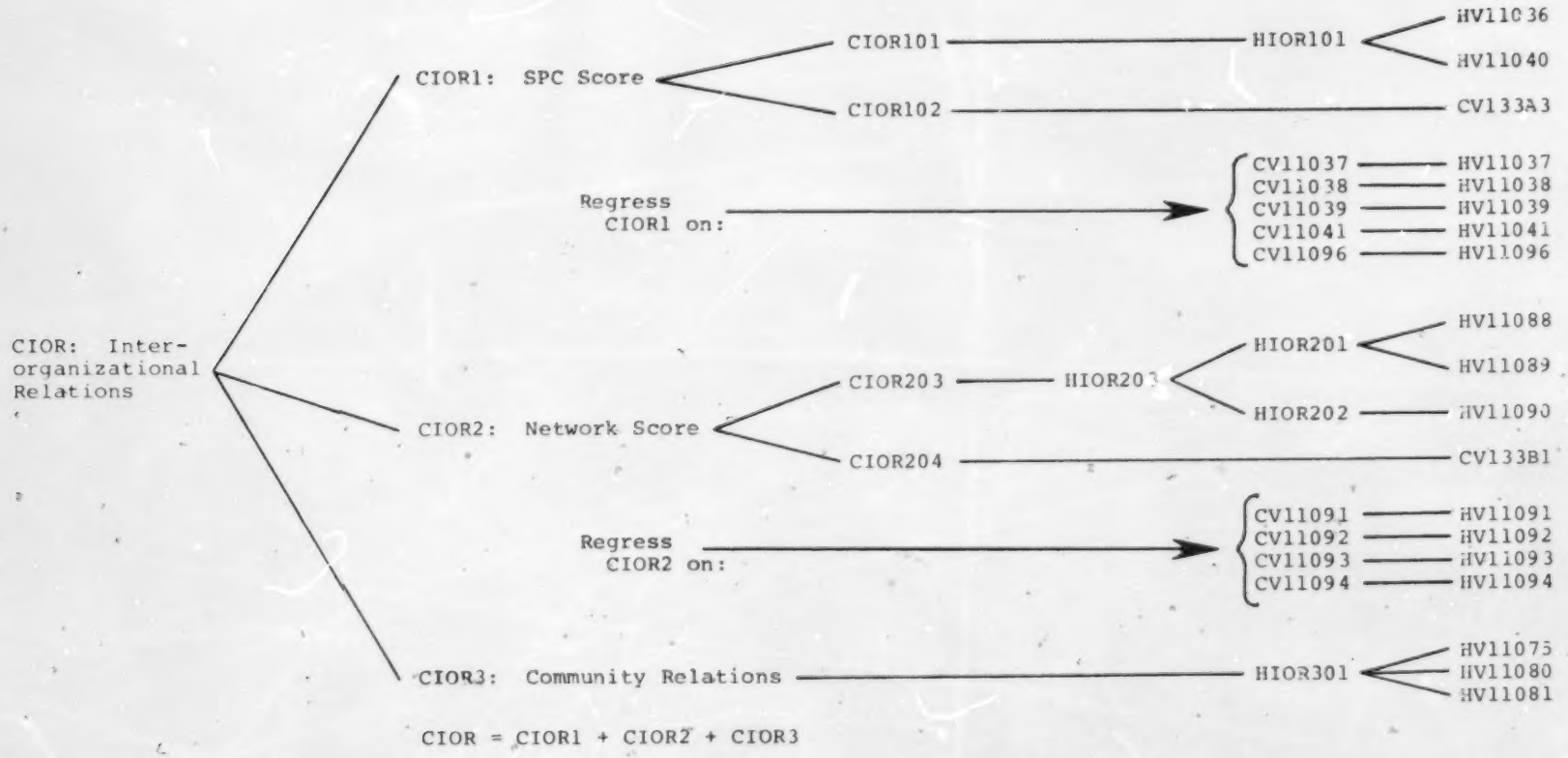

CIOR: Inter-organizational Relations
CIOR1: SPC Score
CIOR101
HIOR101
HV11036
HV11040
CIOR102
CV133A3
Regress CIOR1 on:
CV11037 HV11037
CV11038 HV11038
CV11039 HV11039
CV11041 HV11041
CV11096 HV11096
CIOR2: Network Score
CIOR203
HIOR203
HIOR201
HV11088
HV11089
HIOR202
HV11090
CIOR204
CV133B1
Regress CIOR2 on:
CV11091 HV11091
CV11092 HV11092
CV11093 HV11093
CV11094 HV11094
CIOR3: Community Relations
HIOR301
HV11075
HV11080
HV11081
CIOR = CIOR1 + CIOR2 + CIOR3

Figure 1. IOR.

Composites that are specific to I&R unit and subject area are: Utilization of Curriculum Resources (UCR), Information Acquisition (IA), Individualization of Instructional Decisions (IDM), Management of Grouping and of Instructional Continuity (IE), Allocated Learning Time (ALT), and measures of student achievement. In the technical explanations of scaling, composites specific to the 2nd grade I&R unit begin with the letter "A"; composites specific to the 5th grade I&R unit begin with the letter "B." For brevity, a lower case "z" is used as the first letter wherever the explanation of scaling applies to both the 2nd and 5th grade I&R units.

Scaling Procedure

IOR is a composite of three subsets of items. The first component, measured by CIOR1, describes how the System-wide Program Committee (SPC) functions in the school. The second component, measured by CIOR2, includes items describing the extent of school involvement in an IGE network, as well as items assessing the availability of staff development programs. The third component, CIOR3, describes the school relations with the local community. Figure 1 (see page 6) shows the scaling operations for IOR. Figure 1 is a schematic portrayal of the scaling operations. It does not represent the actual numerical operations. Appendix A includes the items used to measure IOR, and Appendix B contains the Statistical Package for the Social Sciences (SPSS) commands used to construct the variable from the data file.

Role of the SPC (CIOR1)

SPC role is divided into two parts:

CIOR101 SPC functioning.

CIOR102 Frequency of meeting.

SPC functioning (CIOR101). CIOR101, the measure of SPC functioning, is a simple sum of the respective general staff means on items HV11036 and HV11040. HV11036 is a rating of how effectively the SPC is functioning in the district, while HV11040 is a rating of the principal's participation in SPC meetings. Each rating scale ranges from zero to four, yielding a possible range of from zero to eight points on CIOR101.

Frequency of meeting (CIOR102). CIOR102, a rating of the frequency with which the SPC meets, based on the response of the school principal to item CV111A1, which assesses the frequency of SPC meetings. Responses are coded so that a frequency of less than once a year is given a value of zero. Meeting less than once a year indicates that the SPC is not playing an appropriate role in coordinating district IGE programs. Once a year is given a value of one, twice a year is accorded a rating of two, three times a three, four times a four, and more than four times is given a value of five, reflecting the fact that the SPC is meeting very frequently.

CIOR1, the SPC component of IOR, is formed by adding CIOR101 and CIOR102, with the qualification that CIOR1 is given a value of zero if there is a score of zero on either part (due to inadequate functioning or minimal meeting frequency). CIOR1 ranges from zero to thirteen. Then CIOR1 was regressed on five other items which are conceptually related to SPC functioning. These are: HV11037, SPC membership composition; HV11038, SPC consultants; HV11039, SPC chairpersons; HV11041, SPC role in district administrative structure; and HV11096, presence of local district staff development opportunities. On the basis of empirically

determined relations, CIOR1 was altered to include information from items HV11037 and HV11039. Appendix B indicates how these items were added to CIOR1.

Network Involvement (CIOR2)

Network involvement is divided into two parts:

CIOR203 Network functioning.

CIOR204 Other IGE groups.

Network functioning (CIOR203). CIOR203, a staff-based rating of the IGE network to which the school belongs, is a composite of two subparts, HIOR201 and HIOR202. HIOR201 is a simple sum of the respective general staff means on items HV11088, which describes state IGE network functioning, and HV11089, which describes activities of the state IGE Coordinating Council. HIOR202 is a rating of HV11090, which describes the network membership. To ensure that the two parts are scaled equally, HIOR202 is rescaled so that values of three or four are doubled to six or eight. Ratings of zero, one, or two are not doubled, as they reflect very poor membership composition. The total, HIOR203, ranges from zero to sixteen. CIOR203 is the school mean of HIOR203.

Other IGE groups (CIOR204). CIOR204, a measure of school involvement with IGE groups other than a network, is based on the principal's response to item CV133B1, which asks whether the school belongs to other groups of IGE schools beyond the district level. This item is coded so that a negative response is given a zero, and an affirmative response is given a one.

CIOR2, the composite measure of network involvement, is a sum of CIOR203 and CIOR204. CIOR2 ranges from zero to seventeen. This variable

was then regressed on four other variables that are conceptually related to network involvement. These are: HV11091, staff development courses in IGE awareness; HV11092, staff development courses in IGE refinement; HV11093, preservice teacher education in IGE preparation; and HV11094, courses for unit leaders and staff teachers in IGE implementation. On the basis of empirically determined relations, CIOR2 was altered to include information from items HV11091 and HV11092. Appendix B indicates how these items were added to CIOR2.

Community Relations (CIOR3)

CIOR3, a measure of the school's community relations, is a simple sum of the respective general staff means on three items: HV11075, school procedures for reporting to the community; HV11080, regularity of the community relations program evaluation; and HV11081, frequency of analyses of community attitudes. CIOR3 ranges from zero to twelve.

The Interorganizational Relations Composite (IOR) is a sum of the three components described above--CIOR1, CIOR2, and CIOR3.

Distribution and Internal Consistencies of the Scaled Composite

Summary statistics for Interorganizational Relations (IOR) based on the 156 schools of the Phase I sample are: mean = 20.486; SD = 6.809; median = 20.228; actual minimum = 6.286; logically possible minimum = 0; actual maximum = 39.812; and logically possible maximum = 42. A histogram of the distribution of IOR is included in Figure 2. The internal consistencies (Crowbach's α) of IOR and its constituents are presented in Table 2.

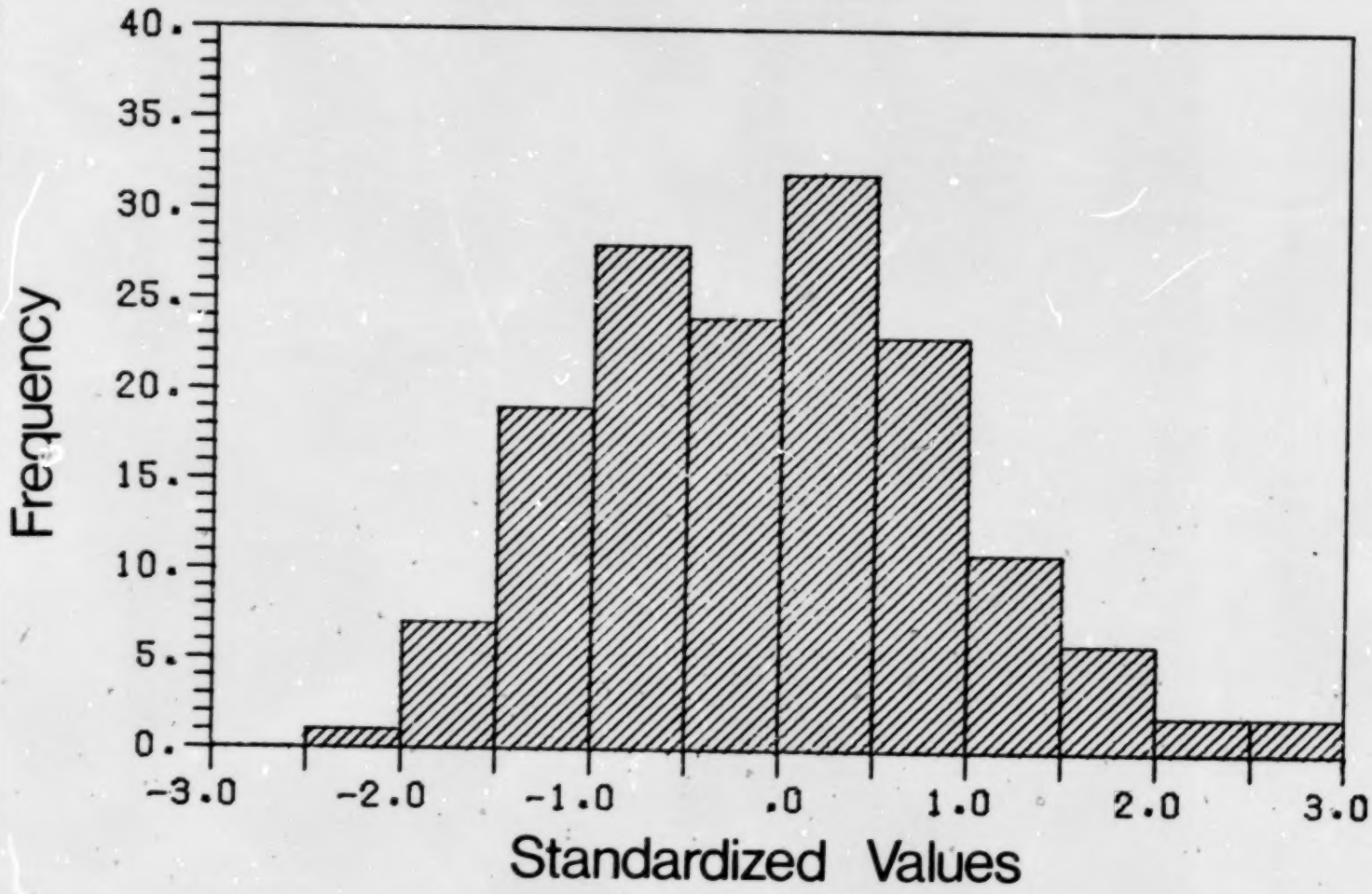


Figure 2. Interorganizational Relations.

Table 2

Internal Consistencies of the Interorganizational Relations Measure (IOR) and Its Constituents

	Variable	α
Composite:	Interorganizational Relations (IOR)	.64062
Constituents:	CIOR1	.73779
	CIOR2	.65826
	CIOR3	.81347

The relation of internal consistency to reliability in general and to validity can be difficult to understand. A composite whose constituents have high internal consistency may or may not possess high test-retest reliability. Conversely, a composite that has high test-retest reliability may have low internal consistency. Any composite that measures a homogeneous construct should rightfully be expected to have high internal consistency, but a composite that measures a construct which combines several facets which are empirically unrelated should not necessarily have high internal consistency, as noted by Cronbach and Meehl (1955)[3]. Several of the composites used in Phase I fit the latter description, and, accordingly, should not be expected to have high internal consistency.

---

[3] Cronbach, L. J., & Meehl, P. E. Construct validity in psychological tests. Psychological Bulletin, 1955, 52, 281-302.

Appendix A: Item Pool Selected

File C: School as Case	File H: General Staff as Case
CV133A3	HV11036
CV133B1	HV11037
	HV11038
	HV11039
	HV11040
	HV11041
	HV11075
	HV11080
	HV11081
	HV11088
	HV11089
	HV11090
	HV11091
	HV11092
	HV11093
	HV11094
	HV11096

File C: School as Case

Do you have meetings about IGE with representatives from only these IGE schools and district office personnel? (This group might be called the Systemwide Program Committee /SPC/)?

___2. No (Go to B) ___1. Yes

CV133A3 How often does this group meet?

___1. less than once a year ___4. three times a year

___2. once a year ___5. four times a year

___3. twice a year ___6. more than four times a year

CV133B1 B. Does your school belong to any other group of IGE schools (League, Network regional group, PACT, HUB) which includes IGE schools that are not in your school district or school system?

___2. No (Go to Section IV below)

___1. Yes

What is the name of this group?

File H: General Staff as Case

HV11036 The SPC functions effectively to coordinate the IGE program of the district policies and state requirements.

HV11037 The SPC is composed of the district superintendent, principals of IGE schools and representative principals of other schools, representative unit leaders and teachers of IGE and other schools, and a representative(s) of community group(s).

HV11038 Subject-matter coordinators, various specialists within the district, and external consultants participate in SPC meetings when program matters related to their areas of speciality are on the agenda.

HV11039 SPC meetings are chaired by the superintendent or his designee.

HV11040 The principal of each IGE school participates in decision making in meetings of the SPC, transmits information from IGE school staff to the SPC, and attempts to have implemented decisions made by the SPC.

HV11041 When a large percentage of the schools of a district are IGE, the SPC is integrated into the district administrative structure and all district officials have supporting roles for IGE schooling.

HV11075 The school's procedures for interpreting and reporting progress and problems with instruction to the community are effective.

HV11080 The home-school program is evaluated regularly.

HV11081 The school periodically performs an analysis of community attitudes regarding present and future school programs and practices.

HV11088 A state IGE network, composed of local IGE schools, institutions, the state education agency, and intermediate education agencies, functions effectively at the state, regional, and local level to coordinate IGE implementation in your state.

HV11089 The State IGE Coordinating Council, composed of representatives of the state education agency and of representatives of teacher education institutions, intermediate agencies, and local school districts from the various Regional IGE Coordinating Councils of the state, coordinates IGE activities at the state level.

HV11090 A Regional IGE Coordinating Council comprised of representatives of the SPC's of the area, teacher education institutions, intermediate agencies, and state education agency coordinate IGE activities in your geographic area.

HV11091 Credit courses and/or noncredit staff development programs are provided throughout your state to assist schools in awareness, commitment, and changeover to IGE.

HV11092 Credit courses and/or noncredit staff development programs are provided throughout your state to assist IGE schools refine their IGE practices.

HV11093 Preservice teacher education courses and programs are offered in your geographic area to prepare teachers for IGE.

HV11094 Graduate courses and programs are offered in your geographic area to prepare prospective unit leaders and staff teachers for IGE.

HV11096 Graduate courses and/or staff development programs are offered in your school district to enable teacher, unit leaders, principals, and others experienced in IGE to improve their competencies.

Appendix B: SPSS Commands for IOR

Scaling SPC

Operations to do in HGENERAL

```
COMPUTE           HIOR101 = HV11036 + HV11040
ASSIGN MISSING    HIOR101 (-99)
VALUE LABELS      HIOR101 (0) LOWEST  (8) HIGHEST
```

Operations to do in CSCHOOL

```
ADD VARIABLES     CIOR101, CV11037, CV11038, CV11039, CV11041,
                  CV11096
VAR LABELS        CIOR101, SCHOOL MEAN ON HIOR101/
                  CV11037, SCHOOL MEAN ON HV11037/
                  CV11038, SCHOOL MEAN ON HV11038/
                  CV11039, SCHOOL MEAN ON HV11039/
                  CV11041, SCHOOL MEAN ON HV11041/
                  CV11096, SCHOOL MEAN ON HV11096/

MISSING VALUES    CIOR101 TO CV11096  (-99)

COMPUTE           CIOR102 = CV133A3
RECODE            CIOR102 (1,9=0) (2=1) (3=2) (4=3) (5=4) (6=5)

COMPUTE           CIOR1 = CIOR101 + CIOR102
IF                (0 EQ CIOR101 or CIOR102) CIOR1 = 0

ASSIGN MISSING    CIOR102, CIOR1  (-99)
VAR LABELS        CIOR1, SCHOOL WIDE SPC SCORE/
VALUE LABELS      CIOR1 (0) LOWEST  (13) HIGHEST

REGRESSION        CIOR1 WITH CV11037, CV11038, CV11039, CV11041,
                  CV11096  (5)/

STATISTIC         1
```

Scaling NETWORK

Operations to do in HGENERAL

```
COMPUTE           HIOR201 = HV11088 + HV11089
VALUE LABEL       HIOR201 (0) LOWEST  (8) HIGHEST
COMPUTE           HIOR202 = HV11090
RECODE            HIOR202 (3=6)  (4=8)
COMPUTE           HIOR203 = HIOR201 + HIOR202
VALUE LABELS      HIOR203  (0) LOWEST  (16) HIGHEST
```

Operations to do in CSCHOOL

ADD VARIABLES	CIOR203, CV11091, CV11092, CV11093, CV11094, CV11095
VAR LABELS	CIOR203, SCHOOL MEAN ON HIOR203/ CV11091, SCHOOL MEAN ON HV11091/ CV11092, SCHOOL MEAN ON HV11092/ CV11093, SCHOOL MEAN ON HV11093/ CV11094, SCHOOL MEAN ON HV11094/
MISSING VALUES	CIOR203 TO CV11094 (-99)
COMPUTE	CIOR204 = CV133B1
RECODE	CIOR204 (2,9=0)
COMPUTE	CIOR2 = CIOR203 + CIOR204
ASSIGN MISSING	CIOR204, CIOR2 (-99)
VAR LABELS	CIOR2, SCHOOL WIDE NETWORK SCORE/
VALUE LABELS	CIOR2 (0) LOWEST (17) HIGHEST
REGRESSION	CIOR2 WITH CV11091, CV11092, CV11093, CV11094 (4)/
STATISTIC	1

Scaling COMMUNITY

Operations to do in HGENERAL

COMPUTE	HIOR3 = HV11075 + HV11080 + HV11081
ASSIGN MISSING	HIOR3 (-99)
VAR LABELS	HIOR3, SCHOOL WIDE COMMUNITY SCORE/
VALUE LABELS	HIOR3 (0) LOWEST (12) HIGHEST

Operations to do in CSCHOOL

ADD VARIABLES	CIOR3
VAR LABELS	CIOR3, SCHOOL MEAN HIOR3/
MISSING VALUES	CIOR3 (-99)
VALUE LABELS	CIOR3 (0) LOWEST (12) HIGHEST

Add Results of Regressions and Creation of CIOR

```
COMPUTE          CIOR1A = CIOR1
COMPUTE          CIOR1 = CIOR1 * (1-.53318) + .53318 *
                         (1.741795 * CV11039 +
                          1.580844 * CV11037 + .8498821)
ASSIGN MISSING   CIOR1 (-99)
COMPUTE          CIOR2A = CIOR2
COMPUTE          CIOR2 = CIOR2 *(1-.67029) +.67029 *
                 (1.671832 * CV11091 + 1.592237 * CV11092
                  + .3046731)
ASSIGN MISSING   CIOR2 (-99)
COMPUTE          CIOR = CIOR1 + CIOR2 + CIOR3
ASSIGN MISSING   CIOR (-99)
VALUE LABEL      CIOR (0) LOWEST  (42) HIGHEST
```

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of Practices in Individualized Schooling

Associated Faculty

Vernon L. Allen
Professor
Psychology

B. Dean Bowles
Professor
Educational Administration

Thomas P. Carpenter
Associate Professor
Curriculum and Instruction

Louise J. Cherry
Assistant Professor
Educational Psychology

William J. Davis
Assistant Professor
Educational Administration

W. Patrick Dickson
Assistant Professor
Child and Family Studies

Lloyd E. Frohreich
Associate Professor
Educational Administration

Marvin J. Fruth
Professor
Educational Administration

Dale D. Johnson
Professor
Curriculum and Instruction

Herbert J. Klausmeier
V.A.C. Henmon Professor
Educational Psychology

Joel R. Levin
Professor
Educational Psychology

James M. Lipham
Professor
Educational Administration

Dominic W. Massaro
Professor
Psychology

Donald M. McIsaac
Professor
Educational Administration

Wayne Otto
Professor
Curriculum and Instruction

Penelope L. Peterson
Assistant Professor
Educational Psychology

Thomas S. Popkewitz
Associate Professor
Curriculum and Instruction

Gary G. Price
Assistant Professor
Curriculum and Instruction

W. Charles Read
Associate Professor
English and Linguistics

Thomas A. Romberg
Professor
Curriculum and Instruction

Richard A. Rossmiller
Professor
Educational Administration

Peter A. Schreiber
Associate Professor
English and Linguistics

B. Robert Tabachnick
Professor
Curriculum and Instruction

Gary G. Wehlage
Associate Professor
Curriculum and Instruction

Steven R. Yussen
Associate Professor
Educational Psychology